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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/889,705	09/19/2001	Robert W. Griffiths	1160-3912.IU	7403

7590 06/16/2003

Joseph A Walkowski
Traskbritt
PO Box 2550
Salt Lake City, UT 84110

EXAMINER

JACKSON, ANDRE K

ART UNIT	PAPER NUMBER
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2856

DATE MAILED: 06/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/889,705	GRIFFITHS ET AL.
	Examiner	Art Unit
	Andre' K. Jackson	2856

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 14 April 2003.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-14 and 16-29 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-14 and 16-29 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 - a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____	6) <input type="checkbox"/> Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-6,13,14,16,17 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Cohen et al.

Regarding claim 1, Cohen et al. disclose a "Capacitance-type fluid level sensor for i.v. and catheter bags" which has a sensor with mutually cooperative first and second electrodes (10,12) arranged on the container in isolation from the interior of the container and having a vertical dimension and a horizontal dimension, where a majority of their areas are vertically and horizontally offset from each other (Figures 2 and 7).

Regarding claim 2, Cohen et al. disclose where the first and second electrodes are substantially vertically (Figure 2) and horizontally offset from each other (Figure 7).

Regarding claim 3, Cohen et al. disclose where the first and second electrodes are completely vertically (Figure 2) and horizontally offset from each other (Figure 7).

Regarding claim 4, Cohen et al. disclose where the first and second electrodes are vertically spaced from each other (Figure 7).

Regarding claim 5, Cohen et al. disclose where the electrodes comprise substantially two-dimensional plates (Figure 2).

Regarding claim 6, Cohen et al. discloses where a conductor is coupled to first and second electrodes (Figure 1).

Regarding claim 13, Cohen et al. disclose at least one alarm responsive to an output signal from the sensor (74).

Regarding claim 14, Cohen et al. disclose where the electrodes are horizontally spaced (Figure 7).

Regarding claim 16, Cohen et al. disclose where the first and second electrodes are placed on a wall of the container (Figure 1).

Regarding claim 17, Cohen et al. disclose a mounting structure can be used to affix the first and second electrodes (Column 2).

Regarding claim 20, Cohen et al. disclose where the electrodes are placed within the wall of the container (Column 4, lines 66-67 and column 5, line 1).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be

patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 7,8 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cohen et al. in view of Larson.

Regarding claim 7, Cohen et al. does not disclose where the conductors are connected to control circuitry. However, Larson discloses an "Apparatus for determining the liquid level in a tank" which teaches where the conductors are connected to control circuitry (Figures 1-2). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Cohen et al. to include where the conductors are connected to control circuitry as taught by Larson. By adding the circuitry the user would be able to regulate the frequency of the circuitry for measuring the amount of fluid in the container.

Regarding claim 8, it is considered a design choice and well within the purview of the skilled artisan to include a "ZIF" connector. Various connectors can be substituted to increase the signal and decrease unwanted noise in the invention.

Regarding claim 12, Cohen et al. does not disclose a control circuitry that is configured to detect a change in capacitance of the sensor. However, Larson discloses control circuitry configured to detect a change in capacitance of the sensor (Figure 1). Therefore, it would have been

obvious to one of ordinary skill in the art at the time of invention to modify Cohen et al. to include control circuitry configured to detect a change in capacitance of the sensor as taught by Larson. By adding this feature the artisan would be able to change the capacitance to continuously monitor fluid level.

5. Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cohen et al. in view of Hannan et al.

Regarding claims 9,10 and 11, Cohen et al. does not disclose where the control circuitry is configured to supply an oscillating signal having a frequency greater than 1MHz, at least 4MHz and at least 8MHz to one of the electrodes. However, Hannan et al. disclose a "Digital liquid level sensing apparatus" which has control circuitry configured to supply a signal having a frequency greater than 1MHz, at least 4 MHz and at least 8MHz to one of the electrodes (Column 9). Therefore, to modify Cohen et al. to include where the control circuitry is configured to supply a signal having a frequency greater than 1MHz, at least 4 MHz and at least 8MHz to one of the electrodes would have been obvious to one of ordinary skill in the art at the time of invention as taught by Hannan et al. since varying the frequency near the upper range gives better results.

6. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cohen et al. in view of Jackson.

Regarding claim 18, Cohen et al. does not disclose where the mounting structure is a thin electrically insulative film. However, Jackson discloses a "Liquid level sensor and electrode assembly therefore" which teaches mounting structure is a thin electrically insulative film (Column 8, line 36). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Cohen et al. to include where the mounting structure is a thin electrically insulative film as taught by Jackson. Adding the film makes it easier for the sensors to stay in place when attached to an i.v. bag.

7. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cohen et al. in view of Jackson as applied to claim 18 above, and further in view of Paglione.

Regarding claim 19, neither Cohen et al. nor Jackson discloses where the thin electrically insulative film is Mylar. However, Paglione discloses a "Method and apparatus for detecting liquid composition and actual liquid level" which has a thin electrically insulative film is Mylar (Column 6, lines 25-33). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Cohen et al. to include where the thin electrically insulative film is Mylar as taught by Paglione since mylar is flexible and ideal to use with flexible containers.

8. Claims 21-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cohen et al. in view of Hannan et al.

Regarding claim 21, Cohen et al. disclose a sensor with first and second electrodes arranged on the wall of the container in isolation from the interior of the container and having a vertical dimension and a horizontal dimension, where a majority of their areas are vertically and horizontally offset from each other (10,12 Figures 2 and 7). Cohen et al. does not disclose where the control circuitry is configured to supply a signal having a frequency greater than 1MHz, at least 4 MHz and at least 8MHz to one of the electrodes. However, Hannan et al. disclose where the control circuitry is configured to supply a signal having a frequency greater than 1MHz, at least 4 MHz and at least 8MHz to one of the electrodes (Column 9). Therefore, to modify Cohen et al. to include where the control circuitry is configured to supply a signal having a frequency greater than 1MHz, at least 4 MHz and at least 8MHz to one of the electrodes would have been obvious to one of ordinary skill in the art at the time of invention as taught by Hannan et al. since varying the frequency near the upper range gives better results. Cohen et al. disclose adjusting a fluid level within the container (Column 11, line 15).

Regarding claim 22, Cohen et al. disclose where the electrodes are placed within the wall of the container (Column 4, lines 66-67 and column 5, line 1).

Regarding claims 23 and 24, Cohen et al. does not disclose where the control circuitry is configured to supply a signal having a frequency

greater than 1MHz, at least 4 MHz and at least 8MHz to one of the electrodes. However, Hannan et al. disclose where the control circuitry is configured to supply a signal having a frequency greater than 1MHz, at least 4 MHz and at least 8MHz to one of the electrodes (Column 9). Therefore, to modify Cohen et al. to include where the control circuitry is configured to supply a signal having a frequency greater than 1MHz, at least 4 MHz and at least 8MHz to one of the electrodes would have been obvious to one of ordinary skill in the art at the time of invention as taught by Hannan et al. since varying the frequency near the upper range gives better results.

Regarding claim 25, Cohen et al. disclose where the first and second electrodes are placed on a wall of the container with adhesive (Column 2, line 59).

Regarding claim 26, Cohen et al. disclose forming the capacitive structure on the wall (Figure 1).

Regarding claims 27 and 28, Cohen et al. disclose where the output signal exceeds a reference signal and an alarm is initiated once the output signal exceeds the reference signal (Column 5, lines16-28).

Regarding claim 29, Cohen et al. disclose where the alarm is a visual alarm (Column 2).

Response to Arguments

9. Applicant's arguments with respect to claims 1-14 and 16-29 have been considered but are moot in view of the new ground(s) of rejection.

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andre' K. Jackson whose telephone

number is (703) 305-1522. The examiner can normally be reached on Mon.-Thurs. 7AM-4PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (703) 305-4705. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

A.J. *A.J.*
June 11, 2003

Hezron S. Williams
HEZRON WILLIAMS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800